



Both images are from: Jae-Hoon Kang, "Vibrations of complex shells with variable thickness", ASCE Journal of Engineering Mechanics, Vol. 143, No. 8, August 2017

## Professor Jae-Hoon Kang

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### Education:

Bachelor of Science, Chung-Ang University, Seoul, 1991. Master of Science, The Ohio State University, 1994.  
Doctor of Philosophy, The Ohio State University, 1997.

### Career:

Postdoctoral fellow The Ohio State University, Columbus, 1997—1998. Assistant professor Kyongju University, Republic of Korea, 1998—2000, Chung-Ang University, Seoul, Republic of Korea, since 2000.

### Research Interests:

Three-dimensional analysis, vibration, stability, plates and shells

### Selected Publications:

Jae-Hoon Kang and Arthur W. Leissa, "Three-dimensional vibrations of hollow cones and cylinders with linear thickness variations", J. Acoust. Soc. Am., Vol. 106, No. 2, 1999, pp. 748-755

Kang, J.-H. and Leissa, A. W. [2000] "Three-dimensional vibrations of thick spherical shell segments with variable thickness," International Journal of Solids and Structures 37, 4811–4823.

Kang, J.-H., Leissa, A.W.: Three-dimensional field equations of motion, and energy functionals for thick shells of revolution with arbitrary curvature and variable thickness. J. Appl. Mech. 68, 953–954 (2001)

A.W. Leissa and J.H. Kang, Exact Solution for Vibration and Buckling of an SS-C-SS-C Rectangular Plate Loaded by Linearly Varying in-Plane Stresses, Int. J. Mech. Sci., vol. 44(9), pp. 1925–1945, 2002.

Kang, J.-H., Leissa, A.W.: Three-dimensional vibration analysis of solid and hollow hemispheres having varying thickness with and without axial conical holes. *J. Vib. Control* 10(2), 199–214 (2004)

Shim, H.-J., Kang, J.-H.: Free vibrations of solid and hollow hemi-ellipsoids of revolution from a three-dimensional theory. *Int. J. Eng. Sci.* 42, 1793–1815 (2004)

Kang, J.-H. and Kim, C.-G., ‘Minimum-weight design of compressively loaded composite plates and stiffened panels for postbuckling strength by Genetic Algorithm’, *Composite Structures*, Volume 69(2), pp 239- 246, 2005.

Jae-Hoon Kang and Arthur W. Leissa, “Three-dimensional vibration analysis of thick hyperboloidal shells of revolution”, *Journal of Sound and Vibration*, Vol. 282, Nos. 1-2, April 2005, pp. 277-296

Kang, J.-H. and A.W. Leissa, Free vibration analysis of complete paraboloidal shells of revolution with variable thickness and solid paraboloids from a three-dimensional theory. *Computers & structures*, 2005. 83(31): p. 2594-2608.

J.H. Kang, A.W. Leissa, “Exact solutions for the buckling of rectangular plates having linearly varying in-plane loading on two opposite simply supported edges”, *Int. J. Solids Struct.*, 42 (2005), pp. 4220-4238

Kang, J.H.: Field equations, equations of motion, and energy functionals for thick shells of revolution with arbitrary curvature and variable thickness from a three-dimensional theory. *Acta Mech.* 188, 21–37 (2007)

Kang, J.-H., Leissa, A.W.: Vibration analysis of solid ellipsoids and hollow ellipsoidal shells of revolution with variable thickness from a three-dimensional theory. *Acta Mech.* 197, 97–117 (2008)

Jae-Hoon Kang, “Three-dimensional vibration analysis of joined thick conical-cylindrical shells of revolution with variable thickness”, *Journal of Sound and Vibration*, Vol. 331, No. 18, pp 4187-4198, August 2012

Jae-Hoon Kang, “Vibration analysis of hemispherical shells of revolution having variable thickness with and without axial conical holes from a three-dimensional theory”, *ASCE Journal of Engineering Mechanics*, Vol. 139, No. 7, July 2013

[Jae-Hoon Kang](#) “Vibration analysis of clamped, complete conical shells of revolution from a three-dimensional theory”, *J. Appl. Mech.* 2013;81(1):014501-014501-3. doi:10.1115/1.4024401. January 2014

Jae-Hoon Kang, “Free vibrations of combined hemispherical-cylindrical shells of revolution with a top opening”, *International Journal of Structural Stability and Dynamics*, Vol. 14, No. 1, 1350023, January 2014

Jae-Hoon Kang, “Vibration analysis of complete conical shells with variable thickness”, *International Journal of Structural Stability and Dynamics*, Vol. 14, No. 4, 1450001, May 2014

Jae-Hoon Kang, “Vibrations of complete hollow spheres with variable thickness”, *ASCE Journal of Engineering Mechanics*, Vol. 141, No. 9, September 2015

Kang, J.H. (2015), "Vibration analysis of shallow or deep, complete parabolic shells with variable thickness", *KSCE J. Civil Eng.*, 19(7), 2172-2178.

Jae-Hoon Kang, “Vibration analysis of toroidal shells with hollow circular cross-section having variable thickness”, *ASCE Journal of Engineering Mechanics*, Vol. 142, No. 9, September 2016

Jae-Hoon Kang, “Exact characteristic equations in closed-form for vibration of completely free Timoshenko beams”, *International Journal of Structural Stability and Dynamics*, Vol. 16, No. 10, 1550078, December 2016

Jae-Hoon Kang, “Vibration analysis of a circular cylinder closed with a hemi-spheroidal cap having a hole”, [Archive of Applied Mechanics, Vol. 87, No. 2, pp 183-199, February 2017](#)

Kang, J.H.: Vibrations of a cylindrical shell closed with a hemi-spheroidal dome from a three-dimensional analysis. *Acta Mech.* 228(2), 531–545 (2017)

Jae-Hoon Kang, “Vibration analysis of shallow spherical domes with non-uniform thickness”, *Int. J. Str. Stab. Dyn.*, 17(2), 1750016 (2017) [18 pages], March 2017

Yeong-Bin Yang and Jae-Hoon Kang, “Vibrations of a composite shell of hemiellipsoidal-cylindrical shell having variable thickness with and without a top opening”, *Thin-Walled Structures*, Vol. 119, pp 677-686, October 2017

Jae-Hoon Kang, "Vibrations of complex shells with variable thickness", ASCE Journal of Engineering Mechanics, Vol. 143, No. 8, August 2017

Jae-Hoon Kang. "Three-Dimensional Vibration Analysis of a Hermetic Capsule with Variable Thickness", AIAA Journal, Vol. 55, No. 6 (2017), pp. 2093-2102.

Jae-Hoon Kang, "Axisymmetric vibration of rotating annular plate with variable thickness subjected to tensile centrifugal body force", International Journal of Structural Stability and Dynamics, Vol. 17, No. 9, 1750101, November 2017

Soo-Min Ko and Jae-Hoon Kang, "Free vibration analysis of shallow and deep ellipsoidal shells having variable thickness with and without a top opening", Acta Mechanica, Vol. 228, No. 12, pp 4391-4409, December 2017

Jae-Hoon Kang. "Vibrations of a Torus with Hollow Elliptical Cross Section Having Variable Thickness", AIAA Journal, Vol. 56, No. 1 (2018), pp. 376-386.

Jae-Hoon Kang. "Vibrations of Complex Shells of Cylindrical and Ellipsoidal Shell", AIAA Journal, Vol. 56, No. 2 (2018), pp. 878-882.

Y.B. Yang and J.H. Kang, "Vibration and buckling analysis of a rotating annular plate subjected to a compressive centrifugal body force", International Journal of Structural Stability and Dynamics, Vol. 18, No. 7, 1850097, July 2018

Jae-Hoon Kang, "Vibration of toroidal shells with hollow circular cross-sections", International Journal of Structural Stability and Dynamics, Vol. 18, No. 9, 1850102, September 2018

Jae-Hoon Kang, "3D vibration analysis of combined shells of revolution", International Journal of Structural Stability and Dynamics, Vol. 19, No. 2, 1950005, February 2019

Soo-Min Ko and Jae-Hoon Kang, "Vibration of hemispherical-cylindrical-hemispherical shells and complete hollow spherical shells with variable thickness", Journal of Structural Stability and Dynamics, Vol. 19, No. 3, 1950018, March 2019